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# (54) An edible fat blend

(57) A spread which is relatively high in cis monounsaturated fatty acids content and relatively low in trans fatty acids content is provided. The spread is prepared from a fat phase which comprises at least one and generally two vegetable oils which are high in cis monounsaturates and a hardstock fat to provide structure to the spread which typically is an interesterified hardstock fat containing palm oil, palm oil fractions and coconut oil. One of the fats high in cis monounsaturates is olive oil and the other may be rapeseed oil or high oleic acid sunflower oil. The spread is prepared using a margarine process, the fat phase constituting in the range of 30% to 60% by weight of the spread.

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"An edible fat blend"

The present invention relates to an edible fat blend which is relatively high in *cis* monounsaturated fatty acids, and the invention also relates to a water-in-oil emulsion comprising the fat blend, and to a spread prepared from the water-in-oil emulsion.

Medical research indicates that ingestion of spreads high in *cis* monounsaturated fatty acids provide many beneficial health effects, in particular, for those who are concerned with high blood cholesterol levels. Such spreads may be ingested on bread or the like. Spreads which are high in *cis* monounsaturates are prepared from fats which themselves are high in *cis* monounsaturates, typically, vegetable fats, such as, olive oil, rapeseed oil, canola oil, high oleic acid sunflower oil and the like. These oils, in general, are liquid at room temperature, and accordingly, a hardstock fat is required to provide the spread with a firm structure. Hardstock fats, of the type which are typically used to provide a firm structure to a spread, in general, are relatively high in *trans* fatty acids. Medical research indicates that ingestion of spreads which are high in *trans* fatty acids is undesirable, particularly, for those who are prone to heart disease, typical hardstock fats which are used

are butter fat, hydrogenated vegetable fats and the like. A typical hydrogenated vegetable fat is hydrogenated soya bean oil. It is known that in the hydrogenation process of such fats relatively large amounts of *trans* fatty acids are produced, for example, hydrogenated soya bean oil may contain over 42% *trans* isomers.

There is therefore a need for a spread and an edible fat blend which is relatively high in *cis* monounsaturated fatty acids, but which overcomes the problems of known spreads and edible fat blends.

The present invention is directed towards providing such a spread, a water-in-oil emulsion and an edible fat blend.

According to the invention there is provided an edible fat blend comprising a first fat having a relatively high *cis* monounsaturated fatty acid content, and a hardstock for providing structure to the blend, the hardstock fat having a relatively low *trans* fatty acids content.

The advantages of the invention are many. In particular, the invention provides an edible fat blend which is relatively high in *cis* monounsaturated fatty

acids, but at the same time relatively low in *trans* fatty acids. The fat blend is particularly suitable for use as a bakery shortening, and is also particularly suitable for providing the fat phase of a water-in-oil emulsion from which a spread may be prepared. A spread prepared from the edible fat blend is likewise relatively high in *cis* monounsaturated fatty acids and relatively low in *trans* fatty acids content. Thus, ingestion of the fat blend whether in the form of the fat blend or as a spread prepared from the fat blend provides many beneficial health effects with virtually no undesirable effects.

In one aspect of the invention the hardstock fat constitutes in the range of 10% to 60% by weight of the fat blend. Preferably, the hardstock fat constitutes in the range of 15% to 60% by weight of the fat blend. Advantageously, the hardstock fat constitutes in the range of 20% to 40% by weight of the fat blend, and in general, the hardstock fat constitutes in the range of 23% to 37% by weight of the fat blend.

It is desirable to maintain the proportion of the hardstock fat as low as possible, while at the same time the proportion of the hardstock fat should be sufficiently high to provide adequate structure to the

fat blend. In general, it has been found that by maintaining the proportion by weight of the fat blend of the hardstock fat between 23% and 37% provides a sufficiently firm structure, while at the same time providing a fat blend with the many beneficial health effects. Depending on the first and second fats the proportion of the hardstock fat may be as low as 10% by weight of the fat blend and still provide adequate structure to the fat blend and any spreads prepared from the fat blend.

In another aspect of the invention the hardstock fat is selected from any one or more of the following fats:

palm oil,
coconut oil,
palm kernel oil, and
fractions of any of the above oils.

It is preferable, that the above hardstock fats should be refined and deodorised, and it has been found that the above oils are particularly suitable hardstock fats for providing the structure to the fat blend, while at the same time minimising the *trans* fatty acids content of the fat blend. In general, the *trans* fatty acids content of these hardstock fats does not exceed 1½% by weight of the hardstock fat.

Preferably, the hardstock fat is palm oil, and/or its fractions. Advantageously, the hardstock fat is interesterified. Ideally, the hardstock fat comprises a mixture of palm oil, palm oil fractions and coconut oil which are mixed together and then interesterified.

It has been found that the use of palm oil or its fractions as a hardstock fat may cause a textural defect in the fat blend, and where the fat blend provides the base for the fat phase of a water-in-oil emulsion spread, the textural defect is particularly undesirable. Such a textural defect is known as "sandiness" or "grittiness" whereby a spread or edible fat blend with such textural defect tends to have a "sandy" or "gritty" mouth feel. However, it has been found that by interesterifying the palm oil and/or other hardstock fats the textural defect is eliminated. Interesterification of the hardstock fat or fats causes the positions of the fatty acid components on the triacylglycerol back bone to be altered, thereby preventing the "sandiness" or "grittiness" mouth feel. The hardstock fats may be interesterified individually or may be mixed together and subsequently interesterified. A particularly desirable hardstock fat comprises a mixture of palm oil, palm oil fractions and coconut oil which are mixed together and subsequently interesterified.

In one aspect of the invention the first fat is a vegetable fat. Preferably, the first fat is selected from any one or more of the following fats:

olive oil,
rapeseed oil,
canola oil,
sunflower oil high in oleic acid, and
peanut oil.

Advantageously, the first fat is olive oil. It has been found that the fat blend when prepared with the first fat being olive oil provides significant beneficial health effects, and a spread prepared from such a fat blend is particularly suitable for those concerned with high cholesterol diets. It is preferable that the olive oil is refined, and ideally, the olive oil is deodorised.

In another aspect of the invention the fat blend comprises a second fat having a relatively high *cis* monounsaturated fatty acid content. Preferably, the second fat is a vegetable fat. Advantageously, the second fat is selected from any one or more of the following fats:

olive oil,
rapeseed oil,
canola oil,

sunflower oil high in oleic acid, and peanut oil.

Ideally, the second fat is a high oleic acid sunflower oil. In a preferred aspect of the invention the sunflower oil is a sunflower oil which is sold under the trade name TRISUN. The second fat may also be rapeseed/canola oil.

Sunflower oil, rapeseed oil and canola oil being relatively high in *cis* monounsaturated fatty acids are particularly suitable as the second fat in the fat blend.

In one aspect of the invention the second fat constitutes up to 50% by weight of the fat blend. Preferably, the second fat constitutes in the range of 25% to 50% by weight of the fat blend, and the second fat may constitute up to 15% by weight of the fat blend.

In general, the first fat should constitute at least 10% by weight of the fat blend. Preferably, the first fat constitutes at least 20% by weight of the fat blend. Advantageously, the first fat constitutes in the range of 20% to 70% by weight of the fat blend.

While it is desirable to have the proportions of the first and second fats as high as possible, the need to provide structure to the fat blend imposes an upper limit to the proportions of these fats. However, fat blends which are particularly desirable are prepared with the first fat being within the range of 20% to 70% by weight of the fat blend and the second fat being within the range of 25% to 50% by weight of the fat blend. In general, it is desirable that the sum of the first and second fats should not exceed 90% by weight of the fat blend.

Ideally, where the first and/or second fat is being provided by rapeseed oil, the rapeseed oil should be low erucic acid rapeseed oil which is sometimes referred to as Canola oil.

In another aspect of the invention the fat blend comprises an emulsifier, the emulsifier may be mono and di-glycerides of fatty acids.

The fat blend may also comprise a colouring agent, and the colouring agent may be selected from any one or more of the following colouring agents:

annatto,

beta carotene, and

curcumin.

Additionally, the invention provides a water-in-oil emulsion comprising a continuous fat phase derived from the edible fat blend according to the invention, and a discontinuous aqueous phase dispersed in the fat phase.

In one aspect of the invention the fat phase constitutes in the range of 5% to 95% by weight of the water-in-oil emulsion. Preferably, the fat phase constitutes in the range of 15% to 85% by weight of the water-in-oil emulsion. Advantageously, the fat phase constitutes in the range of 20% to 80% by weight of the water-in-oil emulsion. Ideally, the fat phase constitutes in the range of 30% to 60% by weight of the water-in-oil emulsion.

The aqueous phase may comprise any one or more of the following ingredients:

skimmed milk,

butter milk,

whey,

whey powder,

skimmed milk powder,

butter milk powder,

salt,

acidulant, such as lactic acid or other organic acid,

a preservative, such as, potassium sorbate or sorbic acid,

sodium caseinate,

a stabiliser containing one or more of sodium alginate, gelatine, pectin, carrageenan, maltodextrine, and

flavouring agents.

The invention also provides a spread prepared from the water-in-oil emulsion according to the invention.

The invention will be more clearly understood from the following description of some non-limiting examples thereof which are set out below.

In each of the examples below an edible spread according to the invention is prepared, which has a relatively high *cis* monounsaturated fatty acids content and which is relatively low in *trans* fatty acids. The spreads are prepared from a water-in-oil emulsion, which is prepared from an aqueous phase and a fat phase. In each example the fat phase is derived from an edible fat blend also according to the invention. The edible fat blend of each example comprises a first fat which is relatively high in *cis* monounsaturated fatty acids and a second fat which is also relatively high in *cis* monounsaturated fatty

acids. In all the examples the first fat is provided by olive oil, while in Examples 1 to 4 the second fat is provided by rapeseed oil, and in Example 5 the second fat is provided by high oleic acid sunflower oil. The fat blend of the spreads of each of the examples also comprises a hardstock fat or fats to provide a firm structure to the fat blend, and in turn, the spread, and the hardstock fat in all of the examples is relatively low in *trans* fatty acids. In the spreads of Examples 1, 2 and 4 the hardstock fat is provided by a mixture of palm oil, palm oil fractions and coconut oil which are mixed together and subsequently interesterified. In Example 3 the hardstock fat is provided by a mixture of harden soya bean oil and coconut oil, which, when combined are relatively low in *trans* fatty acids.

In all the examples the ingredients of the fat phase are set out as a percentage by weight of the fat blend forming the fat phase. The ingredients of the aqueous phase are set as a percentage by weight of the aqueous phase.

EXAMPLE 1

Fat phase

| | |
|---|---|
| Olive Oil | 25.0% |
| Rapeseed Oil | 49.0% |

| | |
|---|---|
| Interesterified Hardstock comprising Palm Oil, Palm Oil fractions and Coconut Oil | 25.0% |
| Mono and di-glycerides of fatty acids | 1.0% |

Aqueous phase

| | |
|---|---|
| Water | 95.6% |
| Sodium Alginate | 1.66% |
| Salt | 2.50% |
| Potassium Sorbate | 0.16% |
| Lactic Acid | 0.06% |

The spread is prepared using a margarine process. A water-in-oil emulsion is prepared by dispersing the aqueous phase in the fat phase in the proportion of 60% aqueous phase to 40% fat phase by weight of the water-in-oil emulsion.

To prepare the fat phase, the ingredients of the fat phase are placed in a mixing tank and raised to a temperature of approximately 40°C to 45°C and are thoroughly mixed. The ingredients of the aqueous phase are separately mixed at a temperature of approximately 75°C. With the fat phase at 45°C and the aqueous phase at 75°C, the aqueous phase in the proportion 60% by weight of the water-in-oil emulsion is dispersed in the fat phase in the proportion of 40%

by weight of the water-in-oil emulsion to form the water-in-oil emulsion. The resulting water-in-oil emulsion is processed by conventional means, typically, in a scraped surface heat exchanger and ancillary equipment for pasteurisation and is then cooled. The cooled water-in-oil emulsion is subjected to texturising and plasticising to provide a spread of acceptable consistency which remains solid at room temperature. Analysis of the spread prepared according to Example 1 produced the following results:

Total fat - 40% by weight of the spread,

of which:

Saturated fatty acids constitute 9.30% by weight of the spread,

*cis* monounsaturated fatty acids constitute approximately 22.62% by weight of the spread,

Polyunsaturated fatty acids constitute 8.35% by weight of the spread, and

*Trans* fatty acids constitute approximately 0.93% by weight of the spread.

Rapeseed oil is an oil high in oleic acid and in turn high in *cis* monounsaturated fatty acids, and in general, is a less expensive oil than olive oil. Thus, the provision of rapeseed oil enables a lesser amount of olive oil to be used, while still providing

a spread relatively high in *cis* monounsaturated fatty acids, which provides the health benefits of such a spread. The interesterified hardstock fat is a hardstock fat which is low in *trans* fatty acids, and which provides a firm structure to the spread. Since the interesterified hardstock fat is relatively low in *trans* fatty acids, the spread is also low in *trans* fatty acids. The interesterification of the hardstock provides a spread which has a desirable mouth feel.

EXAMPLE 2

Fat phase

| | |
|---|---|
| Olive Oil | 40.0% |
| Rapeseed Oil | 40.0% |
| Interesterified Hardstock comprising Palm Oil, Palm Oil fractions and Coconut Oil | 19.0% |
| Mono and di-glycerides of fatty acids | 1.0% |
| Beta Carotene (30%) | 0.003% |

Aqueous phase

The same as the aqueous phase of Example 1.

The spread according to Example 2 was prepared in similar fashion to that of the spread of Example 1. The fat phase constituted 40% by weight of the spread, while the aqueous phase constituted 60% by weight of

the spread. An analysis of the spread of Example 2 produced the following results:

Total fat - 40% by weight of the spread,

of which:

Saturated fatty acids constitute 9.52% by weight of the spread,

*cis* monounsaturated fatty acids constitute approximately 21.92% by weight of the spread,

Polyunsaturated fatty acids constitute 7.67% by weight of the spread, and

*Trans* fatty acids constitute approximately 0.89% by weight of the spread.

The interesterified hardstock fat is a hardstock fat and is low in *trans* fatty acids. This fat provides a firm structure to the spread.

EXAMPLE 3

Fat phase

| | |
|---|---|
| Olive Oil | 40.0% |
| Rapeseed Oil | 29.0% |
| Hardened Soya Bean Oil | 10.0% |
| Coconut Oil | 20.0% |
| Mono and di-glycerides of fatty acids | 1.0% |
| Beta Carotene (30%) | 0.003% |

Aqueous phase

The same as the aqueous phase of Example 1.

The spread according to Example 3 was prepared in similar fashion to that of the spread of Example 1. The fat phase constituted 40% by weight of the spread, while the aqueous phase constituted 60% by weight of the spread. An analysis of the spread of Example 3 produced the following results:

Total fat - 40.0% by weight of the spread, of which:

Saturated fatty acids constitute 11.41% by weight of the spread,

*cis* monounsaturated fatty acids constitute approximately 20.20% by weight of the spread,

Polyunsaturated fatty acids constitute 5.94% by weight of the spread, and

*Trans* fatty acids constitute approximately 2.46% by weight of the spread.

The hardened soya bean oil and coconut oil are hardstock fats, and provide a firm structure to the spread. The coconut oil is relatively low in *trans* fatty acids, and although the hardened soya bean oil is relatively high in *trans* fatty acids, the fact that only 10% of the fat phase is constituted by hardened

soya bean oil does not unduly effect the *trans* fatty acids content of the spread. As can be seen from the above analysis, although the *trans* fatty acids content is 2.46% by weight of the spread, it is still relatively low.

EXAMPLE 4

Fat phase

| | |
|---|---|
| Olive Oil | 40.0% |
| Rapeseed Oil | 31.0% |
| Interesterified Hardstock comprising Palm Oil, Palm Oil fractions and Coconut Oil | 28.0% |
| Emulsifier | 1.0% |

Aqueous phase

| | |
|---|---|
| Water | 90.98% |
| Salt | 4.0% |
| Whey Powder | 4.0% |
| Potassium Sorbate | 0.25% |
| Sodium Alginate | 0.75% |

The spread according to Example 4 was prepared in similar fashion to that of the spread of Example 1, with the exception that the fat phase constituted 60% by weight of the spread, while the aqueous phase constituted 40% by weight of the spread. An analysis

of the spread of Example 4 produced the following results:

Total fat - 60.0% by weight of the spread, of which:

Saturated fatty acids constitute 13.40% by weight of the spread,

*cis* monounsaturated fatty acids constitute approximately 35.08% by weight of the spread,

Polyunsaturated fatty acids constitute 10.38% by weight of the spread, and

*Trans* fatty acids constitute approximately 1.13% by weight of the spread.

Example 5

Fat phase

| | |
|---|---|
| Olive Oil | 40.0% |
| TRISUN, high oleic Sunflower Oil | 31.0% |
| Interesterified Hardstock | 28.0% |
| Emulsifier | 1.0% |

Aqueous phase

The same as the aqueous phase of Example 4.

The spread according to Example 5 was prepared in similar fashion to that of the spread of Example 1. The fat phase in this Example 5 constitutes 60% by

weight of the spread, while the aqueous phase constitutes 40% by weight of the spread. An analysis of the spread of Example 5 produced the following results:

Total fat - 60.0% by weight of the spread, of which:

Saturated fatty acids constitute 17.4% by weight of the spread,

*cis* monounsaturated fatty acids constitute approximately 35.2% by weight of the spread,

Polyunsaturated fatty acids constitute 6.3% by weight of the spread, and

*Trans* fatty acids constitute approximately 1.1% by weight of the spread.

Comparative Test

Comparative tests were carried out on the spread prepared in accordance with Example 1 and a prior art spread which was high in hydrogenated fatty acids. The prior art spread was prepared from an aqueous phase similar to the aqueous phase of Example 1 and the following fat phase:

Fat Phase

| | |
|---|---|
| Olive Oil | 25% by weight of the fat phase |
| Rapeseed Oil | 43% by weight of the fat phase |
| Hydrogenated Soya | |

| | |
|---|---|
| Bean Oil | 31% by weight of the fat phase |
| Mono and di-glycerides of fatty acids | 1% by weight of the fat phase. |

This prior art spread was prepared using a similar method to that described with reference to Example 1. The fat phase constituted 40% by weight of the spread and the aqueous phase constituted 60% by weight of the spread. An analysis of the prior art spread produced the following results.

Total fat - 40.0% by weight of the spread, of which:

Saturated fatty acids constitute 5.5% by weight of the spread,

*cis* monounsaturated fatty acids constitute approximately 20.92% by weight of the spread,

Polyunsaturated fatty acids constitute 7.49% by weight of the spread, and

*Trans* fatty acids constitute approximately 6.09% by weight of the spread.

Accordingly the spreads according to the invention of any of the Examples 1 to 5 are considerably lower in *trans* fatty acids than known spreads which are prepared with an hydrogenated fat to provide the

structure. Furthermore, by virtue of the fact that the hardstock fat for providing structure to the spreads according to the invention is prepared from a hardstock fat or fats which is relatively low in *trans* fatty acids, the *trans* fatty acids content of the spread is relatively low, while at the same time, a spread which remains firm at room temperature is provided.

While in the examples described the first fat having a relatively high *cis* monounsaturates content has been described as being olive oil, the first fat may be provided by other fats and oils of relatively high *cis* monounsaturated fatty acids content instead of or in conjunction with olive oil. Similarly, the second fat may be provided by other fats and oils of relatively high *cis* monounsaturated fatty acids content instead of or in conjunction with those described. Other hardstock fats which are relatively low in *trans* fatty acids content may be provided instead of or in conjunction with the hardstock fats described in the examples.

CLAIMS

1. An edible fat blend comprising a first fat having a relatively high *cis* monounsaturated fatty acid content, and a hardstock fat for providing structure to the blend, the hardstock fat having a relatively low *trans* fatty acids content.

2. An edible fat blend as claimed in Claim 1 in which the hardstock fat constitutes in the range of 10% to 60% by weight of the fat blend.

3. An edible fat blend as claimed in Claim 2 in which the hardstock fat constitutes in the range of 15% to 60% by weight of the fat blend.

4. An edible fat blend as claimed in Claim 3 in which the hardstock fat constitutes in the range of 20% to 40% by weight of the fat blend.

5. An edible fat blend as claimed in Claim 4 in which the hardstock fat constitutes in the range of 23% to 37% by weight of the fat blend.

6. An edible fat blend as claimed in any preceding claim in which the hardstock fat is selected from any one or more of the following fats:

palm oil,

coconut oil,

palm kernel oil, and

fractions of any of the above oils.

7. An edible fat blend as claimed in Claim 6 in which the hardstock fat is palm oil, and/or its fractions.

8. An edible fat blend as claimed in any preceding claim in which the hardstock fat is interesterified.

9. An edible fat blend as claimed in any preceding claim in which the hardstock fat comprises a mixture of palm oil, palm oil fractions and coconut oil which are mixed together and then interesterified.

10. An edible fat blend as claimed in any preceding claim in which the first fat is a vegetable fat.

11. An edible fat blend as claimed in any preceding claim in which the first fat is selected from any one or more of the following fats:

olive oil,

rapeseed oil,

canola oil,

sunflower oil high in oleic acid, and

peanut oil.

12. An edible fat blend as claimed in Claim 11 in which the first fat is olive oil.

13. An edible fat blend as claimed in Claim 12 in which the olive oil is refined.

14. An edible fat blend as claimed in Claim 12 or 13 in which the olive oil is deodorised.

15. An edible fat blend as claimed in any preceding claim in which the fat blend comprises a second fat having a relatively high *cis* monounsaturated fatty acid content.

16. An edible fat blend as claimed in Claim 15 in which the second fat is a vegetable fat.

17. An edible fat blend as claimed in Claim 15 or 16 in which the second fat is selected from any one or more of the following fats:

olive oil,
rapeseed oil,
canola oil,
sunflower oil high in oleic acid, and
peanut oil.

18. An edible fat blend as claimed in Claim 17 in

which the second fat is high oleic acid sunflower oil.

19. An edible fat blend as claimed in Claim 18 in which the sunflower oil is a sunflower oil which is sold under the trade name TRISUN.

20. An edible fat blend as claimed in any of Claims 17 to 19 in which the second fat is rapeseed/canola oil.

21. An edible fat blend as claimed in any of Claims 15 to 20 in which the second fat constitutes up to 50% by weight of the fat blend.

22. An edible fat blend as claimed in Claim 21 in which the second fat constitutes in the range of 25% to 50% by weight of the fat blend.

23. An edible fat blend as claimed in Claim 21 in which the second fat constitutes up to 15% by weight of the fat blend.

24. An edible fat blend as claimed in any preceding claim in which the first fat constitutes at least 10% by weight of the fat blend.

25. An edible fat blend as claimed in Claim 24 in

which the first fat constitutes at least 20% by weight of the fat blend.

26. An edible fat blend as claimed in Claim 25 in which the first fat constitutes in the range of 20% to 70% by weight of the fat blend.

27. An edible fat blend as claimed in any preceding claim in which the fat blend comprises an emulsifier.

28. An edible fat blend as claimed in Claim 27 in which the emulsifier is mono and di-glycerides of fatty acids.

29. An edible fat blend as claimed in any preceding claim in which the fat blend comprises a colouring agent.

30. An edible fat blend as claimed in Claim 29 in which the colouring agent is selected from any one or more of the following colouring agents:

annatto,

beta carotene, and

curcumin.

31. An edible fat blend substantially as described herein with reference to the examples.

32. A water-in-oil emulsion comprising a continuous fat phase derived from the edible fat blend as claimed in any preceding claim, and a discontinuous aqueous phase dispersed in the fat phase.

33. A water-in-oil emulsion as claimed in Claim 32 in which the fat phase constitutes in the range of 5% to 95% by weight of the water-in-oil emulsion.

34. A water-in-oil emulsion as claimed in Claim 33 in which the fat phase constitutes in the range of 15% to 85% by weight of the water-in-oil emulsion.

35. A water-in-oil emulsion as claimed in Claim 34 in which the fat phase constitutes in the range of 20% to 80% by weight of the water-in-oil emulsion.

36. A water-in-oil emulsion as claimed in Claim 35 in which the fat phase constitutes in the range of 30% to 60% by weight of the water-in-oil emulsion.

37. A water-in-oil emulsion as claimed in any of Claims 31 to 35 in which the aqueous phase comprises any one or more of the following ingredients:

skimmed milk,

butter milk,

whey,

whey powder,

skimmed milk powder,

butter milk powder,

salt,

acidulant, such as lactic acid or other organic acid,

a preservative, such as, potassium sorbate or sorbic acid,

sodium caseinate,

a stabiliser containing one or more of sodium alginate, gelatine, pectin, carrageenan, maltodextrine, and

flavouring agents.

38. A water-in-oil emulsion substantially as described herein with reference to the examples.

39. A spread comprising the water-in-oil emulsion as claimed in any of Claims 32 to 38.

40. A spread substantially as described herein with reference to the examples.

Patents Act 1977
Examiner's report to the Comptroller under Section 17
The Search report) -29-

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**Relevant Technical Fields**

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**Databases** (see below)
(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE DATABASE: WPI

Documents considered relevant following a search in respect of Claims :-
1-40

**Categories of documents**

X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family; corresponding document.

| Category | Identity of document and relevant passages | | Relevant to claim(s) |
|---|---|---|---|
| X | GB 2244717 A | (CHARLEVILLE) whole document | 1 and 32 at least |
| X | GB 2078245 A | (STANDARD) whole document | 1 and 32 at least |
| X | GB 1244868 | (UNILEVER) Examples | 1 and 32 at least |
| X | EP 0500152 A1 | (UNILEVER) whole document | 1 and 32 at least |
| X | EP 0455278 A2 | (UNILEVER) whole document | 1 and 32 at least |
| X | EP 0209176 A1 | (UNILEVER) Examples | 1 and 32 at least |

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